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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,815	08/13/2001	Chih-Fei J. Wang	NT1143US	8826

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EXAMINER	
TALAPATRA, ANIKA F	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/929,815	Applicant(s) WANG, CHIH-FEI J.	
	Examiner Anika F. Talapatra	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 August 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

a. Page 5, line 8 refers to FIR filters 222 and 224 in figure 2. Figure 2 contains FIR filters 222 and 242. Therefore, the corrected phrase should read, "...FIR filters 222 and 224..." Appropriate correction is required.

b. Page 6, line 5, refers to output signal 324 in figure 3. Figure 3 contains the output signals 326 and 346, corresponding to IIR filters 324 and 344, respectively. Therefore, the corrected phrase should read, "... IIR BPF 324 allows...output signal 326..." Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6, 7, 11, and 12, rejected under 35 U.S.C. 102(b) as being anticipated by Samueli et al. (EP 0716518 A2) (hereto referred to as Samueli).

As to claims 1, 6, and 11, Samueli teaches a converter, a method for converting, and a means for converting, an Intermediate Frequency (IF) signal into a baseband signal consisting of: an In-phase (I) signal, and a Quadrature

(Q), or differing by 90 from the I signal, signal (see Samueli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samueli teaches this system, comprising an analog to digital (A/D) converter (figure 2, element 22), feeding in to two separate paths, one for producing the I signal, and the other for producing the Q signal. The I signal pathway comprises a decimation filter (figure 2, 46) and a matched filter (figure 2, 50). The Q signal pathway comprises ~~a~~ another decimation filter (figure 2, 48) and ~~a~~ another matched filter (figure 2, 52). This is functionally equivalent to the first and second bandpass filters for producing an I and a Q signal, respectively, as claimed by the applicant.

As to claims 2, 7, and 12, Samueli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samueli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samueli teaches this system, comprising two separate paths, one for producing the I signal, and the other for producing the Q signal. The I signal pathway comprises a cosine multiplier (figure 2, element 40. The Q signal pathway comprises a sine multiplier (figure 2, element 42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3, 4, 5, 8, 9, 10, 13, 14, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Samueli in view of MathWorks (MathWorks Inc., Windowing method) (hereto referred to as MathWorks).

As to claims 3, 8, and 13, Samueli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samueli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samueli does not teach a method for band pass filter design. MathWorks teaches a method for band pass filter design, using a SINC function. Using a SINC function for filter design is a well known method for filter design in the art. Therefore, it would be obvious to one of ordinary skill in the art to use a SINC function for filter design of the filters used in the system taught by Samueli.

As to claims 4, 9, and 14, Samueli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samueli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samueli does not teach a method for band pass filter design. MathWorks teaches a method for band pass filter design, wherein the impulse response of the band pass filters are truncated using a window function. Using a window function for filter design is a well known method for filter design in the art. Therefore, it would be obvious to one of ordinary skill in the art to use a window function for filter design of the filters used in the system taught by Samueli.

As to claims 5, 10, and 15, Samueli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samueli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samueli does not teach a method for band pass filter design. MathWorks teaches a method for band pass filter design, wherein the impulse response of the band pass filters are truncated using the Hamming window function. Using the Hamming window function for filter design is a well known method for filter design in the art. Therefore, it would be obvious to one of

ordinary skill in the art to use the Hamming window function for filter design of the filters used in the system taught by Samueli.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. The MathWorks Inc., 1994-2004, Windowing Method. www.mathworks.com/access/helpdesk/help/toolbox/signal/filterd8.html;

b. Dogandzic, A., 2002, Iowa State University, FIR Filter Design, and Introduction to Digital Filters. clue.eng.iastate.edu/~ald/ee424/l7.pdf;

c. EP 0716518 A2, November 1995, Germany, Samueli et al. H04H 1/00;

d. and U.S. Patent 5809009, Matsuoka et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anika F. Talapatra whose telephone number is 571-331-1982. The examiner can normally be reached on 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER